

Evaluating the Effectiveness of Capping Mercury Contaminated Sediments at Eagle Harbor, Washington

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Sediment remediation at a former shipbuilding yard in Eagle Harbor, Washington has been directed at the removal and disposal of “hotspot” sediments contaminated with mercury, as well as the construction of “thick” (1m) and “thin” (15cm) layer caps of clean sediment over less contaminated areas of the site. Monitoring of sediment quality has focused on surface and suspended sediment, and on the colonization of the cap areas with marine organisms. Two years after construction, mercury concentrations in surface sediments (0-10cm) ranged from 0.015 to 0.550 mg/kg (dry weight) in the cap areas, which is less than the marine sediment cleanup level (0.59 mg/kg) and less than mercury concentrations observed in off-cap areas of the harbor (0.595 to 1.18 mg/kg). Monitoring of suspended sediments within the harbor, using sediment traps deployed over a 70-day period, revealed that mercury concentrations have decreased from a baseline (1990) concentration of 1.05 mg/kg to 0.387 mg/kg. Low tide surveys demonstrated that the cap areas have been successfully colonized by 51 invertebrate species with barnacles, amphipods, periwinkle snails, and polychaete worms being most abundant. These initial results indicate that capping of mercury-contaminated sediments at Eagle Harbor has been an effective remediation technique.

More.....

Siting a Confined Disposal and Treatment Facility Within a Regional Framework for Managing Contaminated Sediment: Lessons Learned And Remaining Challenges

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The need for a comprehensive sediment management program in the Puget Sound region was recognized more than 20 years ago. A cooperative program to effectively manage cleaner dredged material was established in 1988. Sediment management standards promulgated in 1991 define requirements for cleaning up contaminated sediment and controlling continued discharges. However, remediation of contaminated sites identified since 1996 has often been delayed because of inadequate regional confined disposal capacity.

Seven federal, state and quasi-public parties are now participating in a joint effort to site and build regional capacity to manage contaminated dredged material by a combination of beneficial uses, treatment and disposal. Thus far, challenges encountered in the multi-user disposal site or MUDS project include funding feasibility studies, reaching consensus on technical and policy issues, generating public interest prior to choosing preferred types of facilities and sites, and identifying a willing facility owner. Many of these challenges have been or are in the process of being resolved, but other significant hurdles remain. Key issues remaining include demonstrating a reliable flow of contaminated material, identifying methods to accelerate cleanup activities, determining the appropriateness of using public lands for aquatic disposal and evaluating the long-term safety and liability of products manufactured from sediment treatment processes.

The authors also describe the need to create a public entity with all the legal authorities needed to form a partnership with one or more private companies to develop confined disposal and treatment capacity. This MUDS authority will need to define the optimum partnership, secure adequate funding, obtain technical and policy assistance, generate legislative interest and public acceptance in order to select, design, build and permit a regional facility.